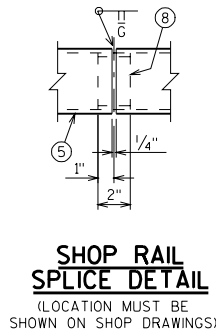
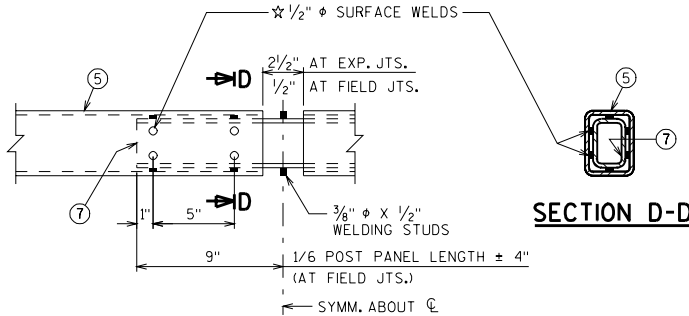


POST SHIM DETAILS

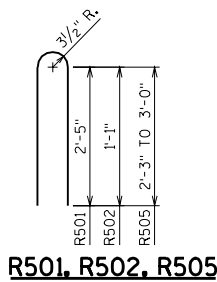
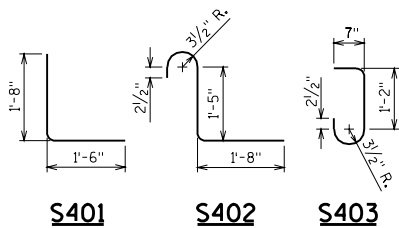


SHOP RAIL  
SPLICE DETAIL  
(LOCATION MUST BE  
SHOWN ON SHOP DRAWINGS)

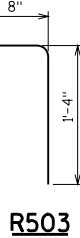


FIELD ERECTION JOINT DETAIL

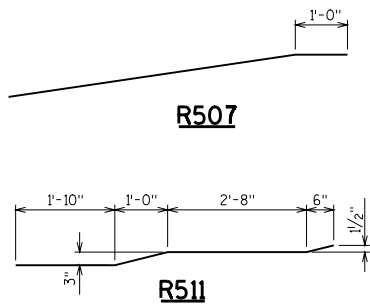
☆ MIN. 5/16" FLAT SURFACE DIA. PUNCHINGS OR  
STUDS MAY BE USED AS AN ALTERNATE.



R501, R502, R505

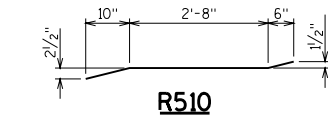


R503



R507

R511



R510

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE  
BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X		3'-0"	X		PARAPET VERT.
S402	X		4'-1"	X		PARAPET VERT.
S403	X		2'-9"	X		PARAPET VERT.
S404	X					PARAPET HORIZ.
R501	X		5'-9"	X		PARAPET VERT.
R502	X		3'-1"	X		PARAPET VERT.
R503	X		1'-11"	X		PARAPET VERT.
R504	X		3'-4"			PARAPET VERT.
R505	X		6'-2"	X	▲	PARAPET VERT.
R506	X					PARAPET HORIZ.
R507	X			X		PARAPET HORIZ.
R508	X		4'-0"			PARAPET HORIZ.
R509	X		5'-8"			PARAPET HORIZ.
R510	X		4'-0"	X		PARAPET HORIZ.
R511	X		6'-0"	X		PARAPET HORIZ.
R512	X					PARAPET HORIZ.
R513	X					PARAPET HORIZ.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY  
BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE  
FOR ACTUAL LENGTHS.

NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE PF B--L-", WHICH SHALL INCLUDE  
ALL STEEL ITEMS SHOWN, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE  
FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE  
CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO. 2, NO. 7 AND NO. 8 SHALL CONFORM TO A.S.T.M. A709 GRADE 36. STRUCTURAL  
TUBING SHALL CONFORM TO A.S.T.M. A500 GRADE B (NO. 1 AND NO. 5).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT  
OF RAILING. SET POSTS NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN TRANSVERSE DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE  
REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 2 AND CAULK AROUND  
PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS  
JOINT SEALER.

ALL JOINTS IN CONCRETE PARAPET ARE TO BE VERTICAL.

AFTER FABRICATION, ALL MATERIAL, EXCEPT ANCHORAGE (NO. 3 & 4) & SHIMS SHALL  
BE PAINTED WITH A THREE COAT ZINC-RICH EPOXY SYSTEM PER WISDOT STANDARD  
SPECIFICATION, SECTION 517, EPOXY SYSTEM. SHIMS SHALL BE GIVEN ONE COAT OF  
ZINC RICH PRIMER PAINT. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. 1.

1/4" ϕ VENT HOLES TO BE LOCATED AT LOW END OF RAILS.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING  
INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

SEE STD. 30.7 FOR BEAM GUARD ANCHOR ASSEMBLY DETAILS.

THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST  
LEVEL 2 (TL-2).

LEGEND

- ① TS 4 X 4 X 0.25 X 1'-9 1/4" STRUCTURAL TUBING WITH 5/8" ϕ HOLES FOR BOLT  
NO. 6. PLACE POSTS VERTICAL IN TRANSVERSE DIRECTION. WELD TO NO. 2.  
PLACE POSTS NORMAL TO GRADE LINE
- ② PLATE 3/4" X 8 1/2" X 9 1/2" WITH 3/8" X 1 1/8" SLOTTED HOLES FOR ANCHOR BOLTS  
NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ③ 5/8" DIA. X 1'-1" LONG ASTM A325 HEX BOLTS (GALVANIZED) WITH A325 NUT AND  
WASHER. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2.  
EMBED A MIN. OF 10". CHAMFER TOP OF BOLTS BEFORE THREADING.
- ④ BAR 3/4" SQ. X 7" LONG. WELD TO ANCHOR BOLTS NO. 3 (GALVANIZED).
- ⑤ TS 4 X 3 X 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH BOLTS NO. 6.  
PROVIDE 5/8" DIA. HOLE FOR NO. 6.
- ⑥ 3/4" DIA. X 9" LONG ROUND HEAD BOLTS, ASTM A307, WITH HEX. NUT AND  
WASHERS AND LOCK WASHER. (1 REQ'D. AT EACH RAIL TO POST LOCATION)
- ⑦ RECTANGULAR SLEEVE FABRICATED FROM 1/4" PLATES. 1'-6" LONG.
- ⑧ RECTANGULAR SLEEVE FABRICATED FROM 1/4" PLATES. PROVIDE "SLIDING FIT" WITH  
MIN. OUT TO OUT DIMENSION OF 3 3/8" X 2 1/2".
- ⑨ 3/4" DIA. X 1'-1" LONG ROUND HEAD BOLTS, ASTM A307, WITH HEX NUT AND WASHERS

RAILING TUBULAR  
TYPE PF DETAILS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION  
STRUCTURES DEVELOPMENT SECTION

APPROVED: Stanley W. Woods

DATE:  
7-04